ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Control Technology 2203* at our website: *Click HERE*

Model 2219 Dual Axis Servo Control Module

High Performance Servo Controller

Control Technology Corporation



The model 2219 Servo Control Module possesses an extensive range of capabilities including ratiometric operation, registration sensing, multiple compensation modes, and multistep home sensing. Along with the impressive performance specifications, these capabilities make it suitable for use in a variety of demanding servo applications.

The 16 bit processor on the model 2219 supports operation at rates up to 4,000,000 counts per second, accelerating at rates to 130,000,000 counts/sec^2. The velocity may be set to a resolution of 1 count/sec. 13 bit analog outputs, isolated from the controller's logic, provide smooth performance at high velocities.

Choice of Compensation Techniques

A variety of filter modes are available to resolve difficult stability problems:

- PID – the traditional Proportional/Integral/Differential compensation filter
- PAV_{ff} – Proportional, with Acceleration and Velocity feedforward terms
- PIV/VA_{ff} – Proportional/Integral position error terms, Velocity error, as well as Acceleration and Velocity feedforward compensation

Direct control of the analog output is also possible.

Special Software Functions

Also built into the model 2219 are a variety of special functions. They include automatic ratio control of the two axes, also known as electronic gearing, where one axis is under program control and the other follows it via a set ratio.

Another automatic function is axis-follower control. In this mode, one axis is disabled and its encoder input is used to monitor an externally driven encoder. The remaining axis automatically follows this position via a set ratio.

The model 2219 also supports two modes of registration mark sensing for web control applications. In the first mode, sensing a registration signal simply stores the current servo position in a register. The second mode causes the motion to continue to a stop at a set distance from the sensing of the registration signal.

For positioning applications, there is an automated two step home-sense function that can optionally make use of an encoder marker pulse for highly accurate initial calibration.

The tuning flexibility, special functions and performance of the model 2219 make this module an exceptional value for designers facing difficult motion control applications.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

The model 2219 Servo Control Module may be used in any Control Tech. 2600XM controller.

Commands are supported for three modes of operation: Absolute positioning, relative positioning and velocity (continuous) mode operation. Automatic home-seeking modes are also supported.

Instantaneous position and error data may be obtained from the board at any time, allowing implementation of self-teaching and fault monitoring programs.

Each axis provides six auxiliary inputs, each with an LED indicator, performing the following functions:

KILL – commands the processor to disable servo output (note: in critical or dangerous applications, external means should be used to implement an E-STOP function!).

FWD-LIM – inhibits motion in the forward direction.

REV-LIM – inhibits motion in the reverse direction.

HOME – used to establish a home (zero) reference point for absolute positioning.

START – any motion may, optionally, be programmed to wait for this input.

REGISTRATION – accurately captures the servo position and, if desired, can alter the move.

For More Information

Further detailed connection and application information may be found in publication IG2219; this is the Installation Guide for the model 2219.

Selection and applications assistance may be obtained from our staff of Systems Specialists — call the number below for further information.

Control Technology Corporation

25 South Street
Hopkinton, MA 01748

Telephone (508) 435-9595
Toll Free (800) 282-5008
FAX (508) 435-2373
email help@control.com

See us on the World Wide Web:
http://www.control.com/

Absolute Maximum Ratings	Min	Max	
Command Load Resistance	2		kΩ
Encoder Input Voltage	0.0	+5.0	VDC
Encoder (+5 V.) Supply Output Current (total - both axes)		500	mA
Ambient Temperature (operating)	0	50	°C

Specifications	Min	Typ	Max	
Command Outputs				
Nominal Voltage Range	-10.0		+10.0	V.D.C
Differential Encoder Inputs				
Nominal Input Range	0.0		+5.0	V.D.C
Open-circuit Voltage (I_i = 0 mA)		5.0	5.38	VDC
Logic-low Current (V_i = 0 V.)		1.1	1.2	mA
Auxiliary Inputs (except Registration)				
Off Voltage (I_i = 0 mA) - Note 2		24.0	26.4	VDC
On Current (V_i = 0 V.)		2.12		mA
Threshold				
low-to-high		14.0		VDC
high-to-low		12.5		VDC
Registration Auxiliary Input				
Off Voltage (I_i = 0 mA)		24.0	26.4	VDC
On Current (V_i = 0 V.)		2.28		mA
Threshold				
low-to-high		5.1		VDC
high-to-low		4.9		VDC

Performance Specifications – (Note 4)	Min	Typ	Max	
Maximum Velocity Setting	1		4,000,000	Steps/sec
Resolution of Max. Velocity Setting		1		Steps/sec
Accel. and Decel. Settings	1		130,000,000	Steps/sec^2
Resolution of Accel/Decel Setting		1		Steps/sec^2
Position Range (Absolute Mode)	-2,147,483,648		2,147,483,647	Steps
Relative Motion Command Range	-2,147,483,648		2,147,483,647	Steps
Position Registration Accuracy		±1		Count

Power Requirements (from controller)			
Logic Supply (5 V.)	260		mA
Auxiliary Supply (24 V.)	175		mA

Notes:

1. Specifications shown above are at 25° C., unless otherwise noted.
2. Dependent on controller auxiliary supply voltage (24 V. typ).
3. PID parameters are programmed as relative values in the range of 0 to 255. Acceleration (A_{ff}) and Velocity feedforward (V_{ff}) range from 0 to 32767.
4. In Performance Specifications, the term "step" refers to one edge transition on either encoder input for that axis.
5. Ratio Range for both axis following and ratio control is ±1 to 32767 minimum and ±32767 to 1 maximum. Depending on the application, high ratios may result in instability.

6/95 – Copyright 1994, 1995 Control Technology Corporation – All rights reserved.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP